

CLAIMS

What is claimed is:

1. A computer-readable medium having computer-executable instructions for a client on a computer network to performing steps for accessing a database on the network via a server, comprising:

receiving a description document from the server, the description document having class definitions for a generic object class and a plurality of object type classes derived from the generic class, and a plurality of database operation methods defined for the generic class, each object type class corresponding to a type of objects in the database, the description document including at least one flag statement identifying an object type;

generating a database access request for performing a database operation on a selected object type, including:

determining whether the selected object type is the object type identified by the flag statement;

if the selected object type is the object type identified by the flag statement, creating an object of the selected object type using the class definition for the selected object type in the received description document;

serializing the created object of the selected object type and including the serialized object in the request message.

2. A computer-readable medium as in claim 1, wherein the description document is in the Web Services Description Language.

3. A computer-readable medium as in claim 2, wherein the step of receiving includes converting the description document into a compiled software format.
4. A computer-readable medium as in claim 3, wherein the compiled software format is for an intermediate language for a computer runtime environment.
5. A computer-readable medium as in claim 1, wherein the database operation methods includes a search method.
6. A computer-readable medium as in claim 5, wherein the search method returns an array as search result.
7. A computer-readable medium as in claim 1, wherein the database operation methods includes at least one method with an array as an operand.
8. A computer-readable medium as in claim 7, wherein the at least one method is a create method.
9. A computer-readable medium having computer-executable instructions for a server of a runtime environment platform to perform steps for providing a service of accessing a database, comprising:
sending, in response to a query from a client, a description document to the client, the description document containing class definitions for a generic object class and a plurality of

object type classes derived from the generic class, and a plurality of database operation methods defined for the generic class, each object type class corresponding to a type of objects in the database, the description document including at least one flag statement identifying an object type;

receiving a request from the client for performing a requested database operation method, the request including a serialized object for the requested database operation method;

deserializing the serialized object;

identifying an object type and parameters of the deserialized object;

accessing the database to carry out the requested database operation method based on the object type and parameters of the deserialized object.

10. A computer-readable medium as in claim 9, having further computer-executable instructions for performing the step of returning a result of carrying out the requested database operation method.

11. A computer-readable medium as in claim 10, wherein the requested database operation method is a search method, and wherein the result of the requested database operation method includes an array.

12. A computer-readable medium as in claim 9, wherein the requested database operation method has an array as operand, and the request includes a plurality of serialized objects of different object types corresponding to elements of the array.

13. A computer-readable medium as in claim 9, wherein the description document is in the Web Services Description Language (WSDL).

14. A computer-readable medium as in claim 13, wherein the step of sending the description document includes converting a compiled code module into the description document.

15. A computer-readable medium as in claim 14, wherein the compiled code module is in an intermediate language for a runtime environment platform.

16. A computer-readable medium as in claim 9, wherein the step of accessing the database to carry out the requested database operation method includes communicating with a database server for the database.

17. A computer-readable medium as in claim 16, where the communicating with the database server is according to a directory access protocol.

18. A computer-readable medium as in claim 17, wherein the database access protocol is the Lightweight Directory Access Protocol (LDAP).

19. A Web service for accessing a database, comprising:
means for providing a description document containing class definitions for a generic object class and a plurality of object type classes derived from the generic class, and a plurality

of database operation methods defined for the generic class, each object type class corresponding to a type of objects in the database, the description document including at least one flag statement identifying an object type;

means for sending, in response to a query from a client, the description document to the client;

means for receiving a request from the client for performing a requested database operation method, the request including a serialized object for the requested database operation method;

means for deserializing the serialized object;

means for identifying an object type and parameters of the deserialized object;

means for accessing the database to carry out the requested database operation method based on the object type and parameters of the deserialized object.

20. A Web service as claim 19, further including means returning a result of carrying out the requested database operation method to the client.

21. A Web service as in claim 19, wherein the directory operation methods include a search method returning an array as a search result.

22. A Web service as in claim 19, wherein the database operation methods include a create method having an array as operand.

23. A Web service as in claim 19, wherein the description document is in the Web Services Description Language (WSDL).
24. A Web service as in claim 23, wherein the means of providing the description document includes a WSDL conversion module for converting a compiled code module into the description document.
25. A Web service as in claim 19, wherein the means for deserializing the object in the request is a runtime environment.
26. A Web service as in claim 19, wherein the means for accessing the database communicates with a database server for the database to carry out the requested database operation method.
27. A Web service as in claim 26, wherein the means for accessing the database communicates with the database server using the Lightweight Directory Access Protocol (LDAP).